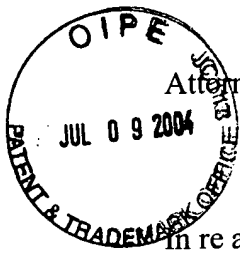


#2675



Attorney Docket No. IMMR-092/02US

PATENT

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re application of Chester L. SCHULER et al.

Serial No.: 10/072,728

Examiner: Ming-Hun Liu

Filed: February 7, 2002

Art Unit: 2675

Confirmation No.: 2651

For: INTERFACE DEVICE WITH TACTILE RESPONSIVENESS

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Enclosed is an Information Disclosure Statement and accompanying Form PTO/SB/08A for the above-identified patent application.

- ☐ In accordance with 37 C.F.R. §1.97(b), no additional fee for submission of the IDS is required.
- ☒ In accordance with 37 C.F.R. §1.97(c), also enclosed is:
 - ☒ the fee of \$180.00 as set forth in 37 C.F.R. §1.17(p); or
 - ☐ a statement as specified in 37 C.F.R. §1.97(e).
- ☐ In accordance with 37 C.F.R. §1.97(d), a statement as specified in 37 C.F.R. §1.97(e) and the fee of \$180.00 as set forth in 37 C.F.R. §1.17(p) are also enclosed.
- ☒ Check in the amount of \$180.00 for the total fee is attached.
- ☒ A return receipt postcard is also enclosed.
- ☐ Please charge \$___ to Deposit Account No. 50-1283 for the total fee. This paper is being submitted in duplicate.

07/13/2004 MBLAND 00000005 10072728

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The Commissioner is hereby authorized to charge any appropriate fees under 37 C.F.R. §§1.16, 1.17, and 1.21 that may be required by this paper, and to credit any overpayment, to Deposit Account No. 50-1283.

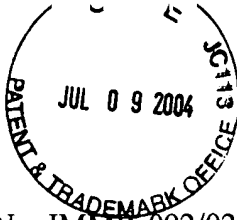
Dated: July 9, 2004

Cooley Godward LLP
ATTN: Patent Group
One Freedom Square
Reston Town Center
11951 Freedom Drive
Reston, VA 20190-5656
Tel: (703) 456-8000
Fax: (703) 456-8100

Respectfully submitted,
COOLEY GODWARD LLP

By: 

Erik B. Milch
Reg. No. 42,887



Attorney Docket No. IMMR-092/02US

PATENT

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

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Serial No.: 10/072,728

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**INFORMATION DISCLOSURE STATEMENT
UNDER 37 C.F.R. §1.97(c)**

In accordance with the duty of disclosure set forth in 37 C.F.R. §1.56, Applicant(s) hereby submits the following information in conformance with 37 C.F.R. §§1.97 and 1.98.

- ☒ Pursuant to 37 C.F.R. §1.98, a copy of each document cited in the attached Form PTO/SB/08A (1 of 2) is enclosed.
- ☒ No copies of the publications listed on the attached Form PTO/SB/08A (2 of 2) are being provided pursuant to 37 C.F.R. §1.98(d) because the publications were previously cited by or submitted to the Office in prior Application Serial Nos. 09/253,392; 08/434,176 (U.S. Patent No. 5,559,412); 08/076,344 (U.S. Patent No. 5,414,337); 07/783,635 (U.S. Patent No. 5,220,260); and/or 08/585,198 (U.S. Patent No. 5,889,670) to which the above-identified application claims priority under 35 U.S.C. §120.
- ☐ No copies of any U.S. patents or U.S. patent application publications listed on the attached Form PTO/SB/08A are being provided pursuant to 37 C.F.R. §1.98 because this application was filed after June 30, 2003.
- ☐ Publication(s) ___ listed on the attached Form PTO/SB/08A were cited in a foreign search or examination report corresponding to ___ application serial no. and mailed on ___.
- ☐ Enclosed is a copy of a non-English publication(s) ___. Pursuant to §609 of the M.P.E.P., Applicant submits the attached foreign search or examination report, which cites such non-English language publication(s).

- ☐ Enclosed is a copy of a non-English publication(s) _____. English language publication ____ (copy enclosed) claims priority from this non-English publication.
- ☐ Enclosed is an explanation of non-English publication(s) ____ for which an English translation is not available.
- ☐ Enclosed is an English translation of non-English publication(s) ____ cited in the attached Form PTO/SB/08A.
- ☐ Enclosed is a copy of pending patent Application Serial No. _____.

This Information Disclosure Statement is filed after the period specified in 37 C.F.R. § 1.97(b), but before the mailing of:

- ☒ a final action under 37 C.F.R. §1.113;
- ☐ a notice of allowance under 37 C.F.R. §1.311; or
- ☐ an action that otherwise closes prosecution in this application.

In accordance with 37 C.F.R. §1.97(c) also enclosed is:

- ☒ Fee under 37 C.F.R. §1.17(p) in the amount of \$180.00; or
- ☐ Statement as specified in 37 C.F.R. §1.97(e):
 - ☐ Each item of information contained in the Information Disclosure Statement cited herein was first cited in a communication from a foreign patent office in a counterpart foreign application not more than three months prior to the filing date of the Information Disclosure Statement; or
 - ☐ No item of information contained in the Information Disclosure Statement submitted herewith was cited in a communication from a foreign patent office in a counterpart foreign application, and, to the knowledge of the undersigned, having made a reasonable inquiry, no item of information contained in the Information Disclosure Statement was known to any individual designated in 37 C.F.R. §1.56(c) more than three months prior to the filing date of the Information Disclosure Statement.

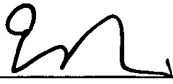
It is respectfully requested that the Examiner consider the above-noted information and return an initialed copy of the attached Form PTO/SB/08A to the undersigned.

Dated: July 9, 2004

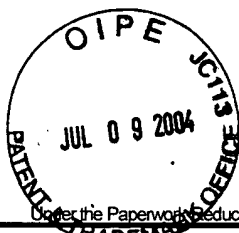
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Respectfully submitted,
COOLEY GODWARD LLP

By:



Erik B. Milch
Reg. No. 42,887



(1 of 2)

PTO/SB/08A (10-01)

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**INFORMATION DISCLOSURE
STATEMENT BY APPLICANT**

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Sheet 1 of 3

Complete if Known

Application Number	10/072,728
Filing Date	February 7, 2002
First Named Inventor	Chester L. Schuler
Art Unit	2675
Examiner Name	Ming-Hun Liu
Attorney Docket Number	IMMR092/02US

U.S. PATENT DOCUMENTS

Examiner	Cite No. ¹	Document Number Number Kind Code ² (if known)	Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear
		6,160,489	12/12/2000	Perry et al.	
		6,111,577	8/29/2000	Zilles et al.	
		5,690,582	11/25/1997	Ulrich et al.	
		5,575,761	11/19/1996	Hajianpour	
		5,437,607	8/1/1995	Taylor	
		5,436,622	7/25/1995	Gutman et al.	
		5,283,970	2/8/1994	Aigner	
		5,175,459	12/29/1992	Danial et al.	
		5,165,897	11/24/1992	Johnson	
		5,022,384	6/11/1991	Freels	
		4,885,565	12/5/1989	Embach	
		4,484,191	11/20/1984	Vavra	
		4,464,117	8/7/1984	Foerst	
		4,333,070	6/1/1982	Barnes	
		4,262,549	4/21/1981	Schwellenbach	
		4,127,752	11/28/1978	Lowthorp	
		2,972,140	2/14/1961	Hirsch	
		4,939,594	7/3/1990	Moxon	
		5,889,670	3/30/1999	Schuler	
		4,685,003	8/4/1987	Westland	
		4,560,983	12/24/1985	Williams	
		4,859,922	8/22/1989	Tauchenitz et al.	
		5,191,320	3/2/1993	MacKay	
		5,187,630	2/16/1993	MacKay	
		4,652,805	3/24/1987	Kohn	
		4,553,080	11/12/1985	Cannon	

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Examiner Initials*	Cite No. ¹	Foreign Patent Document			Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear
		Country Code ³	Number ⁴	Kind Code ⁵ (if known)			
		GB	2 016 225		9/19/1979	Ricoh Company	

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¹ Applicant's unique citation designation number (optional). ² Kind Codes of U.S. Patent Documents at www.uspto.gov or MPEP 901.04. ³ Enter Office that issued the document, by the two-letter code (WIPO Standard ST.3). ⁴ For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document. ⁵ Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST. 16 if possible. ⁶ Applicant is to place a check mark here if English language Translation is attached.

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INFORMATION DISCLOSURE STATEMENT BY APPLICANT

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Sheet 2 of 3

Complete if Known

Application Number 10/072,728

Filing Date February 7, 2002

First Named Inventor Chester L. Schuler

Art Unit 2675

Examiner Name Ming-Hun Liu

Attorney Docket Number IMMR092/02US

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OTHER PRIOR ART -- NON PATENT LITERATURE DOCUMENTS

Examiner Initials *	Cite No. ¹	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published.
		PATRICK, "Design, Construction, and Testing of a Fingertip Tactile Display for Interaction with Virtual and Remote Environments," <i>Master of Science Thesis</i> , MIT, Aug. 1990, archived Nov. 8, 1990.
		CALDER, "Design of A Force-Feedback Touch-Introducing Actuator For Teleoperator Robot Control," <i>Bachelor of Science Thesis</i> , MIT, May 1983, archived June 23, 1983.
		WIKER, "Teletouch Display Development: Phase 1 Report," <i>Technical Report 1230</i> , Naval Ocean Systems Center, San Diego, July 1988.
		BLISS, "Optical-to-Tactile Image Conversion for the Blind," <i>IEEE Transactions on Man-Machine Systems</i> , Vol. MMS-11, No. 1, March 1970.
		JOHNSON, "Shape-Memory Alloy Tactile Feedback Actuator," <i>Armstrong Aerospace Medical Research Laboratory</i> , AAMRL-TR-90-039, August, 1990.
		KONTARINIS et al., "Tactile Display of Vibratory Information in Teleoperation and Virtual Environments," <i>PRESENCE</i> , 4(4):387-402, Harvard Univ., 1995.
		AUKSTAKALNIS et al., "Silicon Mirage: The Art and Science of Virtual Reality," ISBN 0-938151-82-7, pp. 129-180, 1992.
		EBERHARDT et al., "Inducing Dynamic Haptic Perception by The Hand: System Description and Some Results," <i>DSC-Vol. 55-1, Dynamic Systems and Control: Volume 1</i> , ASME 1994.
		GOBEL et al., "Tactile Feedback Applied to Computer Mice," <i>International Journal of Human-Computer Interaction</i> , Vol. 7, No. 1, pp. 1-24, 1995.
		PIMENTEL et al., "Virtual Reality: through the new looking glass," 2 nd Edition; McGraw-Hill, ISBN 0-07-050167-X, pp. 41-202, 1994.
		"Cyberman Technical Specification," <i>Logitech Cyberman SWIFT Supplement to Logitech Mouse Technical Reference and Programming Guide</i> , 4/5/1994.
		OUHYOUNG et al., "The Development of A Low-Cost Force Feedback Joystick and Its Use in the Virtual Reality Environment," <i>Proceedings of the Third Pacific Conference on Computer Graphics and Applications, Pacific Graphics '95</i> , Seoul, Korea, 21-24 August 1995.
		KACZMAREK et al., "Tactile Displays," <i>Virtual Environment Technologies</i> , Chap. 9, pp. 349-414.
		LAKE, "Cyberman from Logitech," at http://www.ibiblio.org/GameBytes/issue21/greviews/cyberman.html , 1994.
		YAMAKITA et al., "Tele-Virtual Reality of Dynamic Mechanical Model," <i>Proceedings of the 1992 IEEE/RSJ International Conference on Intelligent Robots and Systems</i> , Raleigh, NC, July 7-10, 1992

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INFORMATION DISCLOSURE STATEMENT BY APPLICANT

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Sheet 3 of 3

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Application Number 10/072,728

Filing Date February 7, 2002

First Named Inventor Chester L. Schuler

Art Unit 2675

Examiner Name Ming-Hun Liu

Attorney Docket Number IMMR092/02US

OTHER PRIOR ART -- NON PATENT LITERATURE DOCUMENTS

Examiner Initials *	Cite No. ¹	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published.
		NOLL, "Man-Machine Tactile," <i>SID Journal</i> , July/August 1972 Issue.
		ROSENBERG, "Virtual Fixtures: Perceptual Overlays Enhance Operator Performance In Telepresence Tasks," <i>Ph.D. Dissertation</i> , Stanford University, June 1994.

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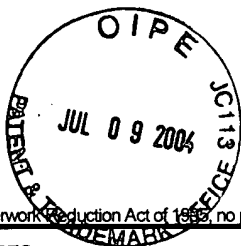
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Sheet 1 of 11

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Application Number	10/072,728
Filing Date	February 7, 2002
First Named Inventor	Chester L. Schuler
Art Unit	2675
Examiner Name	Ming Hun Liu
Attorney Docket Number	IMMR092/02US

U.S. PATENT DOCUMENTS					
Examiner	Cite No. ¹	Document Number Number Kind Code ² (if known)	Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear
		3,765,624	10-1973	Kaniuka	
		3,875,488	04-01-1975	Crocker et al.	
		3,923,166	12-1975	Fletcher et al.	
		4,050,265	09-1977	Drennen et al.	
		4,206,891	06-1980	Perez et al.	
		4,227,319	10-1980	Guy et al.	
		4,228,386	10-1980	Griffith	
		4,398,889	08-16-1983	Lam et al.	
		4,403,756	09-1983	Berlin et al.	
		4,414,984	11-15-1983	Zarudiansky	
		4,426,607	01-1984	Black et al.	
		4,436,188	03-13-1984	Jones	
		4,538,035	08-27-1995	Pool	
		4,538,188	08-1985	Barker et al.	
		4,604,016	08-05-1986	Joyce	
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		4,685,003	08-1987	Westland	
		4,696,445	09-1987	Wright et al.	
		4,706,294	11-10-1987	Ouchida	
		4,729,044	03-1998	Kiesel	
		4,795,296	01-03-1989	Jau	
		4,800,721	01-31-1989	Cemenska et al.	
		4,803,413	02-07-1989	Kendig et al.	
		4,837,734	06-06-1989	Ichikawa et al.	
		4,853,874	08-01-1989	Iwamoto et al.	
		4,857,816	08-1989	Rogozinski et al.	
		4,861,269	08-1989	Meenan, Jr.	
		4,896,554	01-30-1990	Culver	
		4,907,970	03-13-1990	Meenen, Jr.	
		4,937,685	06-1990	Barker et al.	
		4,939,594	07-1990	Moxon et al.	
		4,943,866	07-1990	Barker et al.	
		4,949,119	08-14-1990	Moncrief et al.	
		4,949,193	08-1990	Kiessel	
		4,961,038	10-02-1990	MacMinn	
		4,964,004	10-1990	Barker	

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**INFORMATION DISCLOSURE
STATEMENT BY APPLICANT**

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Sheet **2** of **11****Complete if Known**

Application Number	10/072,728
Filing Date	February 7, 2002
First Named Inventor	Chester L. Schuler
Art Unit	2675
Examiner Name	Ming Hun Liu
Attorney Docket Number	IMMR092/02US

U.S. PATENT DOCUMENTS

Examiner	Cite No. ¹	Document Number Number Kind Code ² (if known)	Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear
		4,979,050	12-1990	Westland et al.	
		4,982,918	01-1991	Kaye	
		4,983,901	01-08-1991	Lehmer	
		5,044,956	09-03-1991	Behensky et al.	
		5,062,594	11-1991	Repperger	
		5,072,361	10-10-1991	Davis et al.	
		5,076,517	12-31-1991	Ferranti et al.	
		5,095,303	03-1992	Clark et al.	
		5,107,080	04-21-1992	Rosen	
		5,107,262	04-21-1992	Cadoz et al.	
		5,113,179	05-12-1992	Scott-Jackson	
		5,116,051	05-26-1992	Moncrief et al.	
		5,120,101	06-1992	Vranish	
		5,142,931	09-01-1992	Menahem	
		5,143,505	09-01-1992	Burdea et al.	
		5,146,566	09-08-1992	Hollis, Jr.	
		5,156,363	10-1992	Cizewski et al.	
		5,182,557	01-26-1993	Lang	
		5,184,319	02-02-1993	Kramer	
		5,185,561	02-09-1993	Good et al.	
		5,186,629	02-16-1993	Rohen	
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		5,189,355	02-23-1993	Larkins et al.	
		5,197,003	03-23-1993	Moncrief et al.	
		5,203,563	04-20-1993	Loper, III	
		5,204,600	04-20-1993	Kahkoska	
		5,209,661	05-1993	Hildreth et al.	
		5,220,260	06-1993	Schuler	
		5,223,776	06-29-1993	Radke et al.	
		5,235,868	08-17-1993	Culver	
		5,264,768	11-23-1993	Gregory et al.	
		5,275,565	01-04-1994	Moncrief	
		5,280,276	01-18-1994	Kwok	
		5,286,203	02-15-1994	Fuller et al.	
		5,354,162	10-11-1994	Burdea et al.	
		5,366,376	11-22-1994	Copperman et al.	
		5,368,484	11-29-1984	Copperman et al.	

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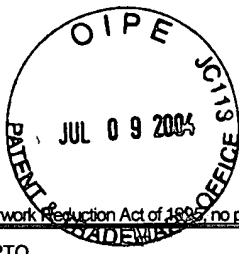
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**INFORMATION DISCLOSURE
STATEMENT BY APPLICANT**

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Sheet **3** of **11****Complete if Known**

Application Number	10/072,728
Filing Date	February 7, 2002
First Named Inventor	Chester L. Schuler
Art Unit	2675
Examiner Name	Ming Hun Liu
Attorney Docket Number	IMMR092/02US

U.S. PATENT DOCUMENTS

Examiner	Cite No. ¹	Document Number Number Kind Code ² (if known)	Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear
		5,381,080	01-10-1995	Schnell et al.	
		5,388,992	02-14-1995	Franklin et al.	
		5,389,865	02-14-1995	Jacobus et al.	
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		5,696,537	12-09-1997	Solhjell	
		5,701,140	12-23-1997	Rosenberg et al.	

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Sheet 4 of 11

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Application Number	10/072,728
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Filing Date	February 7, 2002
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First Named Inventor	Chester L. Schuler
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Art Unit	2675
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Examiner Name	Ming Hun Liu
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Attorney Docket Number	IMMR092/02US
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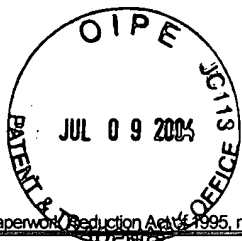
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Sheet

5

of

11

Complete if Known

Application Number

10/072,728

Filing Date

February 7, 2002

First Named Inventor

Chester L. Schuler

Art Unit

2675

Examiner Name

Ming Hun Liu

Attorney Docket Number

IMMR092/02US

Examiner Initials*	Cite No. ¹	Foreign Patent Document			Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear
		Country Code ³	Number ⁴	Kind Code ⁵ (if known)			
		DE	4 400 790	A1	05-18-1995		
		EP	0 349 086		03-01-1990		
		EP	0 111 992		09-1983		
		EP	0085518	A1	08-10-1983		
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		GB	0 326 439		02-08-1991		
		GB	2 235 310	A	06-1990		
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Sheet 6 of 11

Complete if Known

Application Number	10/072,728
Filing Date	February 7, 2002
First Named Inventor	Chester L. Schuler
Art Unit	2675
Examiner Name	Ming Hun Liu
Attorney Docket Number	IMMR092/02US

OTHER PRIOR ART – NON PATENT LITERATURE DOCUMENTS

Examiner Initials *	Cite No. ¹	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published.
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		BEJCZY et al., "Controlling Remote Manipulators Through Kinesthetic Coupling," Computers in Mechanical Engineering NT Control No. MPO-17851; JPL Case No. 5348 Attachment, pp. 48-61, (July 1983)
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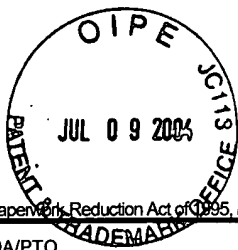
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Sheet 7 of 11

Complete if Known

Application Number	10/072,728
Filing Date	February 7, 2002
First Named Inventor	Chester L. Schuler
Art Unit	2675
Examiner Name	Ming Hun Liu
Attorney Docket Number	IMMR092/02US

OTHER PRIOR ART -- NON PATENT LITERATURE DOCUMENTS

Examiner Initials *	Cite No. ¹	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published.
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		Gotow, J.K., et al., "Perception of Mechanical Properties at the Man-Machine Interface," IEEE 1987, pp.688-689.
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Sheet 8 of 11

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Application Number	10/072,728
Filing Date	February 7, 2002
First Named Inventor	Chester L. Schuler
Art Unit	2675
Examiner Name	Ming Hun Liu
Attorney Docket Number	IMMR092/02US

OTHER PRIOR ART -- NON PATENT LITERATURE DOCUMENTS

Examiner Initials *	Cite No. ¹	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published.
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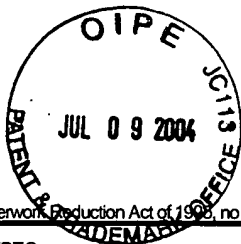
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**INFORMATION DISCLOSURE
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Application Number

10/072,728

Filing Date

February 7, 2002

First Named Inventor

Chester L. Schuler

Art Unit

2675

Examiner Name

Ming Hun Liu

Attorney Docket Number

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**INFORMATION DISCLOSURE
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Sheet 10

of

11

Complete if Known

Application Number 10/072,728

Filing Date February 7, 2002

First Named Inventor Chester L. Schuler

Art Unit 2675

Examiner Name Ming Hun Liu

Attorney Docket Number IMMR092/02US

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		Iwata, H., "Artificial Reality with Force-feedback: Development of Desktop Virtual Space with Compact Master Manipulator," Computer Graphics, Vol. 24, No. 4, 1990, pp. 165-170.
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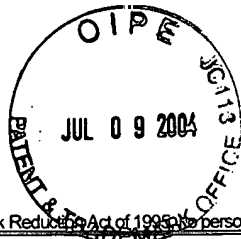
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Sheet 11

of

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Complete if Known

Application Number 10/072,728

Filing Date February 7, 2002

First Named Inventor Chester L. Schuler

Art Unit 2675

Examiner Name Ming Hun Liu

Attorney Docket Number IMMR092/02US

OTHER PRIOR ART – NON PATENT LITERATURE DOCUMENTS

Examiner Initials *	Cite No. ¹	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published.
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